

CLAIMS

What is claimed is:

- 1 1. An apparatus for designing a product, said apparatus comprising:
2 a template module for storing a plurality of tasks and a plurality of rules
3 for designing said product; and
4 a processing module, coupled to said template module and being
5 configured by said plurality of rules, for executing said plurality of tasks.

- 1 2. The apparatus according to claim 1, wherein said template
2 module further comprises at least one rule of said plurality of rules for
3 specifying a sequence of execution for said plurality of tasks.

- 1 3. The apparatus according to claim 1, wherein said template
2 module further comprises at least one rule of said plurality of rules for
3 specifying task information for each task of said plurality of tasks.

- 1 4. The apparatus according to claim 1, wherein said template
2 module further comprises at least one rule of said plurality of rules for
3 specifying guidance and planning for each task of said plurality of tasks.

1 5. The apparatus according to claim 1, wherein said template
2 module further comprises at least one rule of said plurality of rules for
3 specifying a start event and an end event for each task of said plurality of tasks.

1 6. The apparatus according to claim 1, wherein said template
2 module further comprises at least one rule of said plurality of rules for
3 managing data within one task of said plurality of tasks.

1 7. The apparatus according to claim 1, wherein said template
2 module further comprises at least one rule of said plurality of rules for allowing
3 interaction with a user and presenting results to said user.

1 8. The apparatus according to claim 1, wherein said template
2 module further comprises at least one rule of said plurality of rules for
3 specifying interaction of each task of said plurality of tasks with said processing
4 module.

1 9. The apparatus according to claim 4, wherein said at least one rule
2 specifying guidance and planning is encoded in a Bayesian Belief Network.

1 10. The apparatus according to claim 1, wherein said template
2 module further stores a plurality of task details for each task of said plurality of
3 tasks.

1 11. The apparatus according to claim 1, wherein said template
2 module further stores a plurality of task operations for each task of said
3 plurality of tasks.

1 12. The apparatus according to claim 1, wherein said processing
2 module further comprises:
3 a scheduler module for monitoring execution of said plurality of tasks;
4 and
5 a planner module coupled to said scheduler module for monitoring
6 operation of said scheduler module and said template module.

1 13. The apparatus according to claim 12, wherein said scheduler
2 module further selects a project incorporating said plurality of tasks and
3 monitors said execution of each task of said plurality of tasks.

1 14. The apparatus according to claim 13, wherein, while monitoring,
2 said scheduler module further invokes each task of said plurality of tasks,

3 schedules said each task for said execution, determines completion of said each
4 task, and manages data between consecutive tasks of said plurality of tasks.

1 15. The apparatus according to claim 13, wherein, while selecting,
2 said scheduler module further assigns a set of project parameters to said
3 project, initializes said planner module with a set of planner parameters, and
4 displays said set of project parameters to a user.

1 16. The apparatus according to claim 15, wherein said set of project
2 parameters includes initial project parameters provided by said user.

1 17. The apparatus according to claim 15, wherein said scheduler
2 module further updates said set of planner parameters after completion of said
3 each task of said plurality of tasks.

1 18. The apparatus according to claim 12, wherein said scheduler
2 module further updates said set of project parameters after completion of said
3 each task of said plurality of tasks to obtain a set of updated project parameters,
4 and displays said set of updated project parameters to said user.

1 19. The apparatus according to claim 12, wherein said planner
2 module further loads at least one planning and guidance rule of said plurality

3 of rules from said template module, determines a sequence of execution for said
4 each task of said plurality of tasks based on said at least one planning and
5 guidance rule, and predicts a decision for each task of said plurality of tasks.

1 20. The apparatus according to claim 19, wherein said planner
2 module further monitors at least one executed task of said plurality of tasks and
3 updates said decision for said each task of said plurality of tasks remaining to
4 be executed.

1 21. The apparatus according to claim 20, wherein said planner
2 module further obtains at least one result of said at least one executed task of
3 said plurality of tasks and diagnoses said at least one result.

1 22. The apparatus according to claim 12, wherein said processing
2 module further comprises:
3 a presentation module coupled to each of said scheduler module and
4 said planner module for displaying information to a user; and
5 a computation module coupled to each of said presentation module, said
6 scheduler module, and said planner module for performing computations
7 related to said execution of said plurality of tasks.

1 23. The apparatus according to claim 22, wherein said presentation
2 module further displays a plurality of costs incurred and expected in said
3 execution of each task of said plurality of tasks.

1 24. The apparatus according to claim 22, wherein said presentation
2 module further displays a plurality of instructions for executing each task of
3 said plurality of tasks.

1 25. The apparatus according to claim 22, wherein said presentation
2 module further displays results of said plurality of tasks after execution.

1 26. The apparatus according to claim 22, wherein said computation
2 module further includes a plurality of utilities for manipulating data files
3 within said processing module.

1 27. The apparatus according to claim 22, wherein said computation
2 module further includes a plurality of utilities for performing said
3 computations.

1 28. The apparatus according to claim 22, wherein said computation
2 module further includes a plurality of utilities for performing simulations of at
3 least one task of said plurality of tasks within said processing module.

1 29. The apparatus according to claim 22, wherein said computation
2 module further includes a plurality of utilities for performing data analysis
3 within said processing module.

1 30. An apparatus for designing a product, said apparatus comprising:
2 a template module for storing a plurality of tasks and a plurality of rules
3 for designing said product; and
4 a processing module, coupled to said template module and being
5 configured by said plurality of rules, for executing said plurality of tasks;
6 said processing module having a scheduler module for monitoring
7 execution of said plurality of tasks, and a planner module coupled to said
8 scheduler module for monitoring operation of said scheduler module and said
9 template module.

1 31. The apparatus according to claim 30, wherein said template
2 module further comprises at least one rule of said plurality of rules for
3 specifying a sequence of execution for said plurality of tasks.

1 32. The apparatus according to claim 30, wherein said template
2 module further comprises at least one rule of said plurality of rules for
3 specifying task information for each task of said plurality of tasks.

1 33. The apparatus according to claim 30, wherein said template
2 module further comprises at least one rule of said plurality of rules for
3 specifying guidance and planning for each task of said plurality of tasks.

1 34. The apparatus according to claim 30, wherein said template
2 module further comprises at least one rule of said plurality of rules for
3 specifying a start event and an end event for each task of said plurality of tasks.

1 35. The apparatus according to claim 30, wherein said template
2 module further comprises at least one rule of said plurality of rules for
3 managing data within one task of said plurality of tasks.

1 36. The apparatus according to claim 30, wherein said template
2 module further comprises at least one rule of said plurality of rules for allowing
3 interaction with a user and presenting results to said user.

1 37. The apparatus according to claim 30, wherein said template
2 module further comprises at least one rule of said plurality of rules for
3 specifying interaction of each task of said plurality of tasks with said processing
4 module.

1 38. The apparatus according to claim 33, wherein said at least one
2 rule specifying guidance and planning is encoded in a Bayesian Belief Network.

1 39. The apparatus according to claim 30, wherein said scheduler
2 module further selects a project incorporating said plurality of tasks and
3 monitors said execution of each task of said plurality of tasks.

1 40. The apparatus according to claim 39, wherein, while monitoring,
2 said scheduler module further invokes each task of said plurality of tasks,
3 schedules said each task for said execution, determines completion of said each
4 task, and manages data between consecutive tasks of said plurality of tasks.

1 41. The apparatus according to claim 39, wherein, while selecting,
2 said scheduler module further assigns a set of project parameters to said
3 project, initializes said planner module with a set of planner parameters, and
4 displays said set of project parameters to a user.

1 42. The apparatus according to claim 41, wherein said set of project
2 parameters includes initial project parameters provided by said user.

1 43. The apparatus according to claim 41, wherein said scheduler
2 module further updates said set of planner parameters after completion of said
3 each task of said plurality of tasks.

1 44. The apparatus according to claim 30, wherein said scheduler
2 module further updates said set of project parameters after completion of said
3 each task of said plurality of tasks to obtain a set of updated project parameters,
4 and displays said set of updated project parameters to said user.

1 45. The apparatus according to claim 30, wherein said planner
2 module further loads at least one planning and guidance rule of said plurality
3 of rules from said template module, determines a sequence of execution for said
4 each task of said plurality of tasks based on said at least one planning and
5 guidance rule, and predicts a decision for each task of said plurality of tasks.

1 46. The apparatus according to claim 45, wherein said planner
2 module further monitors at least one executed task of said plurality of tasks and
3 updates said decision for said each task of said plurality of tasks remaining to
4 be executed.

1 47. The apparatus according to claim 46, wherein said planner
2 module further obtains at least one result of said at least one executed task of
3 said plurality of tasks and diagnoses said at least one result.

1 48. The apparatus according to claim 30, wherein said processing
2 module further comprises:
3 a presentation module coupled to each of said scheduler module and
4 said planner module for displaying information to a user; and
5 a computation module coupled to each of said presentation module, said
6 scheduler module, and said planner module for performing computations
7 related to said execution of said plurality of tasks.

1 49. The apparatus according to claim 48, wherein said presentation
2 module further displays a plurality of costs incurred and expected in said
3 execution of each task of said plurality of tasks.

1 50. The apparatus according to claim 48, wherein said presentation
2 module further displays a plurality of instructions for executing each task of
3 said plurality of tasks.

1 51. The apparatus according to claim 48, wherein said presentation
2 module further displays results of said plurality of tasks after execution.

1 52. The apparatus according to claim 48, wherein said computation
2 module further includes a plurality of utilities for manipulating data files
3 within said processing module.

1 53. The apparatus according to claim 48, wherein said computation
2 module further includes a plurality of utilities for performing said
3 computations.

1 54. The apparatus according to claim 48, wherein said computation
2 module further includes a plurality of utilities for performing simulations of at
3 least one task of said plurality of tasks within said processing module.

1 55. The apparatus according to claim 48, wherein said computation
2 module further includes a plurality of utilities for performing data analysis
3 within said processing module.

1 56. An apparatus for designing a product, said apparatus comprising:
2 a template module for storing a plurality of tasks and a plurality of rules
3 for designing said product; and
4 a processing module, coupled to said template module and being
5 configured by said plurality of rules, for executing said plurality of tasks;

6 said processing module having a scheduler module for monitoring
7 execution of said plurality of tasks, a planner module coupled to said scheduler
8 module for monitoring operation of said scheduler module and said template
9 module, a presentation module coupled to each of said scheduler module and
10 said planner module for displaying information to a user, and a computation
11 module coupled to each of said presentation module, said scheduler module,
12 and said planner module for performing computations related to said execution
13 of said plurality of tasks.

1 57. A computer readable medium containing executable instructions,
2 which, when executed in a processing system, cause said system to perform a
3 method comprising:
4 storing a plurality of tasks and a plurality of rules for designing a
5 product in a template module; and
6 executing said plurality of tasks in a processing module coupled to said
7 template module and being configured by said plurality of rules.

1 58. The computer readable medium according to claim 57, wherein
2 said template module further comprises at least one rule of said plurality of
3 rules for specifying a sequence of execution for said plurality of tasks.

1 59. The computer readable medium according to claim 57, wherein
2 said template module further comprises at least one rule of said plurality of
3 rules for specifying task information for each task of said plurality of tasks.

1 60. The computer readable medium according to claim 57, wherein
2 said template module further comprises at least one rule of said plurality of
3 rules for specifying guidance and planning for each task of said plurality of
4 tasks.

1 61. The computer readable medium according to claim 57, wherein
2 said template module further comprises at least one rule of said plurality of
3 rules for specifying a start event and an end event for each task of said plurality
4 of tasks.

1 62. The computer readable medium according to claim 57, wherein
2 said template module further comprises at least one rule of said plurality of
3 rules for managing data within one task of said plurality of tasks.

1 63. The computer readable medium according to claim 57, wherein
2 said template module further comprises at least one rule of said plurality of
3 rules for allowing interaction with a user and presenting results to said user.

1 64. The computer readable medium according to claim 57, wherein
2 said template module further comprises at least one rule of said plurality of
3 rules for specifying interaction of each task of said plurality of tasks with said
4 processing module.

1 65. The computer readable medium according to claim 60, wherein
2 said at least one rule specifying guidance and planning is encoded in a Bayesian
3 Belief Network.

1 66. The computer readable medium according to claim 57, wherein
2 said template module further stores a plurality of task details for each task of
3 said plurality of tasks.

1 67. The computer readable medium according to claim 57, wherein
2 said template module further stores a plurality of task operations for each task
3 of said plurality of tasks.

1 68. The computer readable medium according to claim 57, wherein
2 said method further comprises:
3 monitoring execution of said plurality of tasks in a scheduler module
4 within said processing module; and

5 monitoring operation of said scheduler module and said template
6 module in a planner module coupled to said scheduler module within said
7 processing module.

1 69. The computer readable medium according to claim 68, wherein
2 said scheduler module further selects a project incorporating said plurality of
3 tasks and monitors said execution of each task of said plurality of tasks.

1 70. The computer readable medium according to claim 69, wherein,
2 while monitoring, said scheduler module further invokes each task of said
3 plurality of tasks, schedules said each task for said execution, determines
4 completion of said each task, and manages data between consecutive tasks of
5 said plurality of tasks.

1 71. The computer readable medium according to claim 69, wherein,
2 while selecting, said scheduler module further assigns a set of project
3 parameters to said project, initializes said planner module with a set of planner
4 parameters, and displays said set of project parameters to a user.

1 72. The computer readable medium according to claim 71, wherein
2 said set of project parameters includes initial project parameters provided by
3 said user.

1 73. The computer readable medium according to claim 71, wherein
2 said scheduler module further updates said set of planner parameters after
3 completion of said each task of said plurality of tasks.

1 74. The computer readable medium according to claim 68, wherein
2 said scheduler module further updates said set of project parameters after
3 completion of said each task of said plurality of tasks to obtain a set of updated
4 project parameters, and displays said set of updated project parameters to said
5 user.

1 75. The computer readable medium according to claim 68, wherein
2 said planner module further loads at least one planning and guidance rule of
3 said plurality of rules from said template module, determines a sequence of
4 execution for said each task of said plurality of tasks based on said at least one
5 planning and guidance rule, and predicts a decision for each task of said
6 plurality of tasks.

1 76. The computer readable medium according to claim 75, wherein
2 said planner module further monitors at least one executed task of said
3 plurality of tasks and updates said decision for said each task of said plurality
4 of tasks remaining to be executed.

1 77. The computer readable medium according to claim 76, wherein
2 said planner module further obtains at least one result of said at least one
3 executed task of said plurality of tasks and diagnoses said at least one result.

1 78. The computer readable medium according to claim 68, wherein
2 said method further comprises:
3 displaying information to a user by a presentation module coupled to
4 each of said scheduler module and said planner module within said processing
5 module; and
6 performing computations related to said execution of said plurality of
7 tasks by a computation module coupled to each of said presentation module,
8 said scheduler module, and said planner module within said processing
9 module.

1 79. The computer readable medium according to claim 78, wherein
2 said presentation module further displays a plurality of costs incurred and
3 expected in said execution of each task of said plurality of tasks.

1 80. The computer readable medium according to claim 78, wherein
2 said presentation module further displays a plurality of instructions for
3 executing each task of said plurality of tasks.

1 81. The computer readable medium according to claim 78, wherein
2 said presentation module further displays results of said plurality of tasks after
3 execution.

1 82. The computer readable medium according to claim 78, wherein
2 said computation module further includes a plurality of utilities for
3 manipulating data files within said processing module.

1 83. The computer readable medium according to claim 78, wherein
2 said computation module further includes a plurality of utilities for performing
3 said computations.

1 84. The computer readable medium according to claim 78, wherein
2 said computation module further includes a plurality of utilities for performing
3 simulations of at least one task of said plurality of tasks within said processing
4 module.

1 85. The computer readable medium according to claim 78, wherein
2 said computation module further includes a plurality of utilities for performing
3 data analysis within said processing module.